SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver ground and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

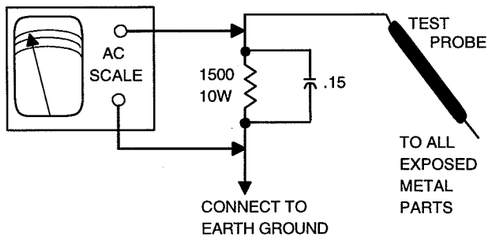
SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC, turn the receiver on, and set all customer controls for normal operation. Measure the voltage at TP7. Voltage should measure between 16.5V and 21.0V. If voltage exceeds this range, the circuit must be repaired. Momentarily connect a jumper between TP7 and the cathode of D421. The receiver should lose raster and sound. If receiver does not lose raster and sound, the shutdown circuit should be repaired. To resume normal operation, remove AC power for 30 seconds and then restore AC power.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by SAMS Technical Publishing as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to SAMS Technical Publishing by the manufacturers of the specific type of replacement part listed.

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SET 4325

MODEL DS19590 (CHASSIS DS19590-00/01)

SANYO

PHOTOFACT® Technical Service Data

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See PHOTOFACT Annual Index

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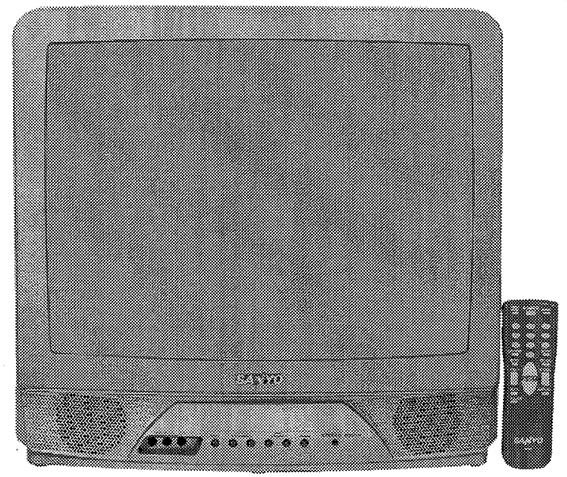
Model DS19590 (Chassis DS19590-00/01)



Essential coverage for servicing a television receiver...

- **Schematics**
- **Component locations**
- **Parts list**

SAMS™ Technical Publishing

AUGUST 2000 SET 4325

4325

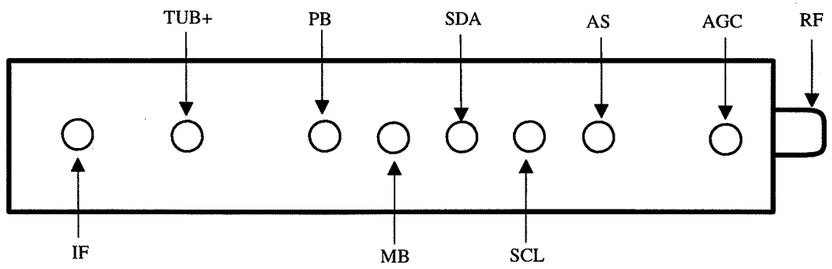
TUNER INFORMATION

TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
AGC	2.5V	2.3V	2.1V
AS	0V	0V	0V
SCL	4.4V	4.4V	4.4V
SDA	4.2V	4.2V	4.2V
MB	5.1V	5.1V	5.1V
PB	5.1V	5.1V	5.1V
TU B+	33.3V	33.3V	33.3V
IF	0V	0V	0V

NOTE: VHF Low Band voltages taken on channel 2.
VHF High Band voltages taken on channel 7.
UHF Band voltages taken on channel 14.

TUNER TERMINAL GUIDE



Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- Philips ECG Company (ECG)
- Sencore, Inc.
- Terrell & Nobis (TNI Electronics)

SCHEMATIC COMPONENT LOCATION GUIDE

A1901	A21	C516	D8	D421	D7	Q202	B10	R351	D5	R704	C18	R1012	E30
C002	A34	C601	A1	D422	E7	Q371	D21	R352	D5	R705	C18	R1013	E30
C003	B35	C604	A2	D428	E6	Q372	D22	R371	E22	R706	C19	R1015	D16
C004	B35	C605	B2	D429	E6	Q401	E7	R372	D22	R707	A18	R1016	C7
C006	A36	C606	B3	D481	C17	Q402	E9	R373	D6	R708	A18	R1017	C7
C007	A36	C607	C2	D482	E6	Q621	D2	R376	D23	R709	B19	R1018	C7
C008	D17	C622	D2	D483	D16	Q622	D2	R377	E22	R711	A19	R1021	D31
C009	A33	C623	D4	D484	E15	Q623	D2	R400	C17	R712	C19	R1022	D31
C022	B34	C703	B18	D486	D15	Q701	B19	R401	C16	R713	B19	R1023	E31
C023	B35	C705	C18	D487	D14	Q703	C19	R402	B16	R715	B19	R1026	D31
C024	B35	C707	B18	D489	D17	Q705	A19	R403	B17	R716	C19	R1027	E31
C026	B36	C708	E20	D493	E17	Q721	D18	R404	E7	R717	A19	R1031	C8
C027	B36	C721	D18	D501	D9	Q831	A23	R406	E8	R722	D18	R1032	C8
C029	B33	C801	D4	D602	A3	Q881	E23	R407	E8	R723	D18	R1033	C9
C103	B28	C803	B16	D603	B3	Q882	E23	R409	D10	R724	D18	R1034	C10
C104	B27	C804	B16	D604	A3	Q901	B20	R411	E9	R803	A16	R1037	C9
C106	C5	C807	B24	D605	B3	Q1001	D30	R421	E6	R804	A17	R1901	B22
C131	A10	C808	B23	D621	C2	Q1002	E30	R422	E7	R806	D24	R1902	B22
C133	B9	C822	D25	D622	D2	Q1003	C7	R423	D6	R807	D23	R1903	B21
C136	A10	C831	A24	D623	D3	Q1021	C9	R426	D7	R808	D23	R1904	B21
C142	B8	C834	C23	D721	D18	Q1022	C9	R428	E6	R809	D22	R1905	B21
C143	B6	C841	B15	D722	D18	Q3407	C29	R481	C16	R821	E23	R1906	B21
C147	E17	C842	B15	D801	B23	Q3421	C32	R482	E6	R822	E23	R1907	B21
C151	B7	C843	B14	D831	A23	Q3422	B34	R483	D15	R826	E24	R3402	C30
C161	B6	C862	C24	D834	C22	Q3427	B34	R484	E15	R827	E23	R3404	B30
C166	B9	C871	D25	D836	C22	R002	A35	R485	D14	R828	E23	R3405	B33
C202	B13	C872	D25	D843	C23	R003	A35	R486	D15	R831	A23	R3407	C29
C203	B12	C881	E23	D1001	D30	R004	A36	R487	D15	R832	A23	R3408	C29
C205	B12	C882	E23	D1003	C8	R009	A33	R489	D17	R833	A23	R3409	D30
C208	B14	C883	E22	D1011	D15	R022	B35	R491	D13	R834	C23	R3411	B30
C211	A12	C885	E23	D1012	D17	R023	B35	R492	D14	R837	C22	R3412	A30
C212	B16	C891	C23	D1901	D3	R024	B36	R493	D13	R842	B26	R3420	B33
C252	B15	C892	C23	D3405	B33	R029	B33	R495	E16	R843	C26	R3421	C32
C253	B15	C894	D25	D3421	D29	R102	D23	R496	D14	R844	B26	R3422	C31
C256	E17	C896	D25	D3422	C29	R103	D23	R497	A20	R846	B25	R3423	A33
C272	C14	C1002	D17	F601	A1	R104	B27	R499	E16	R847	B25	R3425	B33
C282	E5	C1003	D17	IC001	A34	R106	B27	R503	D7	R848	C25	R3426	B33
C351	D5	C1006	D29	IC021	B34	R133	A9	R504	D8	R849	B25	RL601	A2
C352	D5	C1007	E29	IC101	A9	R136	A11	R506	D8	R851	B23	RL601	D2
C371	D6	C1008	C7	IC101	B10	R137	A11	R507	D8	R852	B23	SP901	A36
C401	B16	C1020	E31	IC101	B14	R142	C6	R508	D8	R855	C25	SP902	B36
C403	C16	C1022	D31	IC101	B6	R143	B5	R509	D8	R862	C23	SW1901	B21
C405	B16	C1023	E17	IC101	D6	R151	B7	R511	D10	R864	C23	SW1902	B21
C406	E8	C1031	C8	IC481	E15	R159	B8	R512	D11	R865	A22	SW1903	B21
C407	E8	C1032	B10	IC501	D8	R161	B6	R513	E10	R872	D25	SW1904	B21
C408	E8	C3401	C30	IC601	C2	R162	B6	R517	D9	R873	D25	SW1905	B21
C411	E10	C3402	C30	IC801	B24	R163	B8	R518	D8	R874	D25	SW1906	C21
C417	D10	C3403	C31	IC802	D22	R164	B9	R601	A2	R881	D23	T131	A10
C421	D6	C3404	A29	IC3401	A30	R166	B8	R602	B1	R882	D23	T151	B7
C427	D6	C3406	C29	IC3421	A32	R167	B5	R604	C2	R883	E25	T401	E8
C482	C17	C3407	C29	K1002	C7	R168	B5	R605	C2	R884	E24	T402	D11
C483	C4	C3408	C29	K1002	D29	R201	B11	R606	C2	R886	E25	T1001	D15
C484	E6	C3409	C29	L164	B9	R202	B12	R607	C2	R887	E22	VR1023	C9
C487	D17	C3413	B29	L166	B9	R205	B12	R608	C2	R892	C23	W601	A1
C489	E15	C3414	B29	L201	B12	R207	B10	R621	C2	R893	D25	X141	B5
C493	D13	C3416	B30	L256	E16	R212	B15	R622	C2	R894	D25	X153	A9
C496	D16	C3417	B30	L401	E8	R251	C15	R623	D3	R897	C22	X161	B9
C497	E17	C3421	B30	L402	E9	R252	C15	R624	D2	R898	C22	X251	B14
C498	E17	C3422	C30	L403	E10	R271	B15	R625	D2	R1001	D15	X401	D6
C502	D9	C3424	A34	L801	D3	R272	C14	R626	D3	R1002	E29	X801	B24
C503	D8	C3427	B34	L821	D25	R273	C14	R627	D2	R1003	D29	X3401	C29
C504	D8	D001	B23	L901	B2	R281	E5	R628	D2	R1004	C7		
C505	D5	D101	B27	L902	D10	R285	E5	R629	D2	R1006	D29		
C506	D7	D103	B28	LF601	A1	R286	A17	R701	B18	R1007	D30		
C509	D5	D351	E5	PS601	A2	R287	C18	R702	B18	R1008	D30		
C511	D10	D409	D10	Q135	A10	R288	B18	R703	C19	R1011	E29		

MISCELLANEOUS ADJUSTMENTS

HIGH VOLTAGE CHECK

Tune in a picture. Set brightness, color, picture, and screen control to minimum. Connect a high voltage probe to CRT anode. High voltage should measure 24.5kV to 25.5kV.

CONVERGENCE

Operate the receiver for 15 minutes. Connect a color bar generator to the antenna terminals and tune in a dot pattern. Adjust the 4-pole magnet tabs to converge the red and blue dots at the center of the screen. Adjust the 6-pole magnet tabs to converge the red/blue dots over the green dots at the center of the screen.

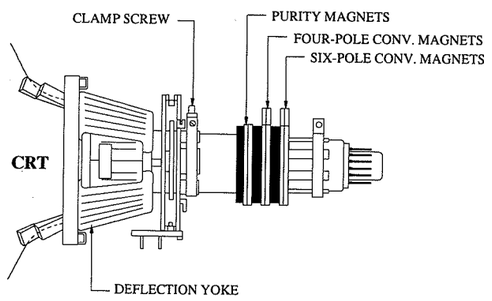
NOTE: Rotate the two tabs of each set of magnets equally and opposite to converge vertically and rotate both tabs in the same direction to converge horizontally. Since the 4-pole and 6-pole magnets interact, repeat the adjustment until center convergence is correct.

Tune in a crosshatch pattern and remove the rubber wedges between the deflection yoke and the CRT. Tilt the deflection yoke up or down to converge the vertical lines at top and bottom of screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke right or left to converge horizontal lines at top and bottom of screen and the vertical lines at the right and left sides of the screen. Repeat convergence procedure if necessary to obtain best overall convergence. Apply adhesive to wedges and carefully replace on the CRT.

PURITY

Operate the receiver for 15 minutes. Tune in a green raster. Use a degaussing coil to demagnetize the CRT and mounting brackets. Loosen the deflection yoke clamp screw and slide the deflection yoke backward to obtain a vertical green band. Rotate and spread the purity magnet tabs until the green band is centered on the screen. Move the deflection yoke forward to obtain a uniform green screen.

CRT NECK ASSEMBLY



ENTERING SERVICE MODE

Disconnect the AC power cord. While pressing the menu button on the front of the set, connect the AC power cord. Use the channel up and down buttons to select the service number. Use volume up and down buttons to change the value.

EXIT SERVICE MODE

To exit service mode when finished making adjustments, press the menu button.

HORIZONTAL POSITION

Tune in a crosshatch pattern. Enter the service mode and select service number 01. Set the value for the best horizontal centering.

RF AGC

Tune in a picture. Enter the service mode and select service number 03. Set the value to a point where no snow (noise) appears in picture. Check all channels for proper operation.

VERTICAL SIZE

Tune in a crosshatch pattern. Enter the service mode and select service number 07. Set the value to achieve proper vertical size and best vertical linearity.

VERTICAL CENTERING

Tune in a crosshatch pattern. Check that the pattern is centered. If too low, install R513 (470 ohms, 1W). If too high, install resistor R512 (470 ohms, 1W).

GRAY SCALE

Tune in an active channel. Enter the service mode. Set the value of service numbers 08, 09, and 10 to 0. Set the value of service numbers 11 and 12 to 40. Select service number 41. Set screen control, color, brightness, and picture to minimum. Adjust screen control, if necessary, to obtain a barely visible horizontal line. Adjust the bias levels for a white line (See the Service Mode Adjustment Chart). Select service number 40 and adjust the drive values for normal black and white picture at all brightness levels (See the Service Mode Adjustment Chart).

SUB BRIGHTNESS

Tune in a color bar pattern. Set picture and brightness to normal. Connect positive lead of a digital voltmeter to TP51 and the negative lead to TP50. Enter the service mode and select service number 25. Adjust value for 575mV ± 10mV.

SUB COLOR

Tune in a picture. Set color at center of its range level. Enter the service mode and select service number 26. Set the value to achieve normal color level.

SUB TINT

Tune in a picture. Set tint at center of its range level. Enter the service mode and select service number 27. Set the value to achieve normal flesh tones.

SUB SHARPNESS

Tune in a picture. Set brightness to minimum. Set picture to maximum. Enter the service mode and select service number 28. Set the value to achieve normal contrast range.

VIDEO INPUT LEVEL

Connect a video signal of 1.0Vp-p to the video input jack. Set TV to video mode. Connect scope to pin 42 of IC101, adjust VR1023 for 2.0Vp-p ± 0.2Vp-p on the scope. Set the receiver to TV mode and press the reset button twice on the remote control. Check brightness and contrast on all channels and readjust if needed.

SOUND

Tune in a local channel. Confirm that the voltage at pin 50 of IC101 is 3.85V ± 0.2V, otherwise adjust T131 for 3.85V ± 0.2V.

OSD HORIZONTAL POSITION

Tune in a local channel. Enter the service mode and select service number 31. Set the value to center the menu on the screen.

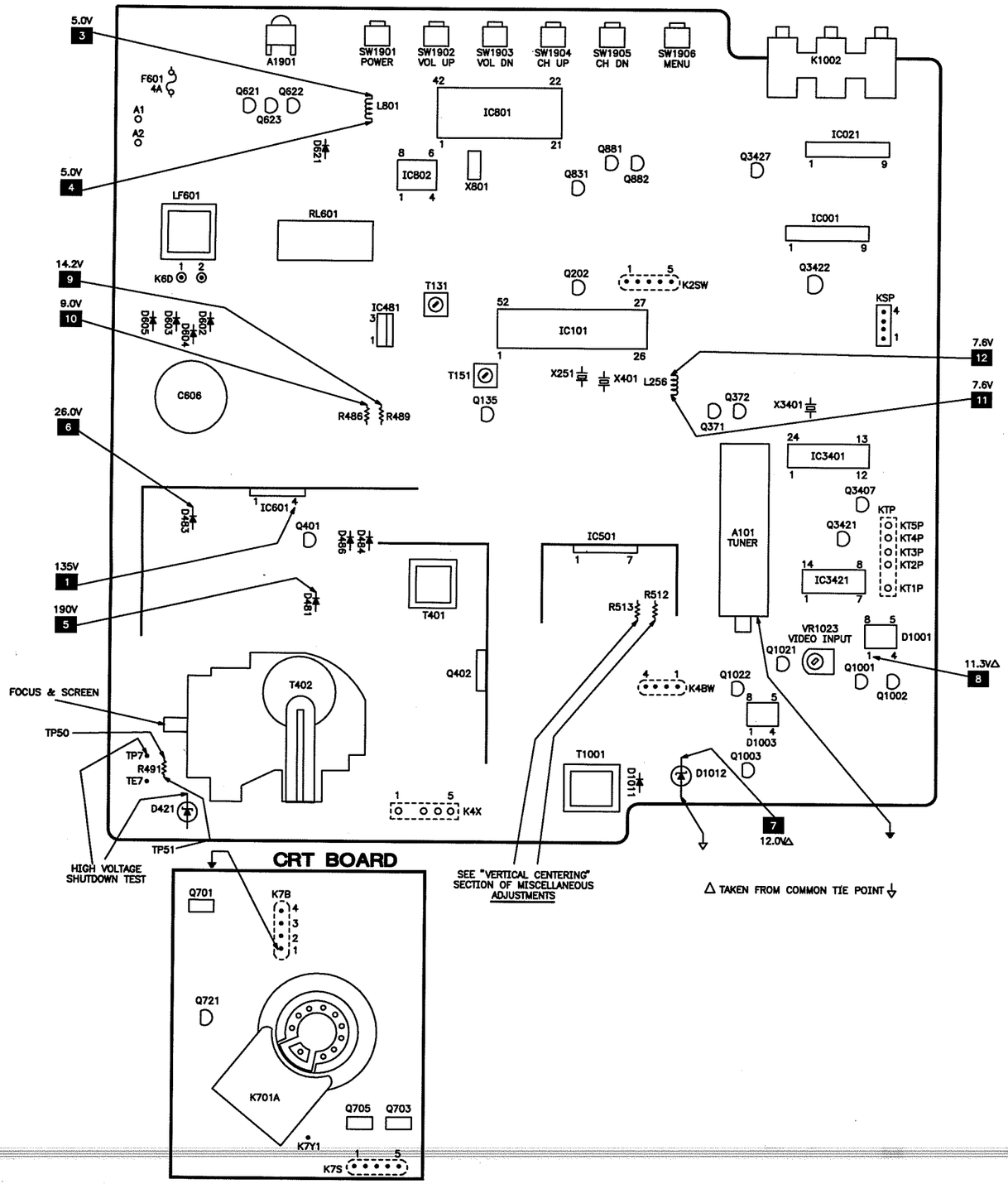
C802 REPLACEMENT

Perform the following adjustments after replacing IC802. Enter the service mode, select service number 01, and set value to 13. Select service number 13, and set value to 1. Select service number 24 and set value to 0. Select service number 26 and set value to 7. Select service number 27 and set value to 21. Select service number 29 and set value to 36. Exit service mode.

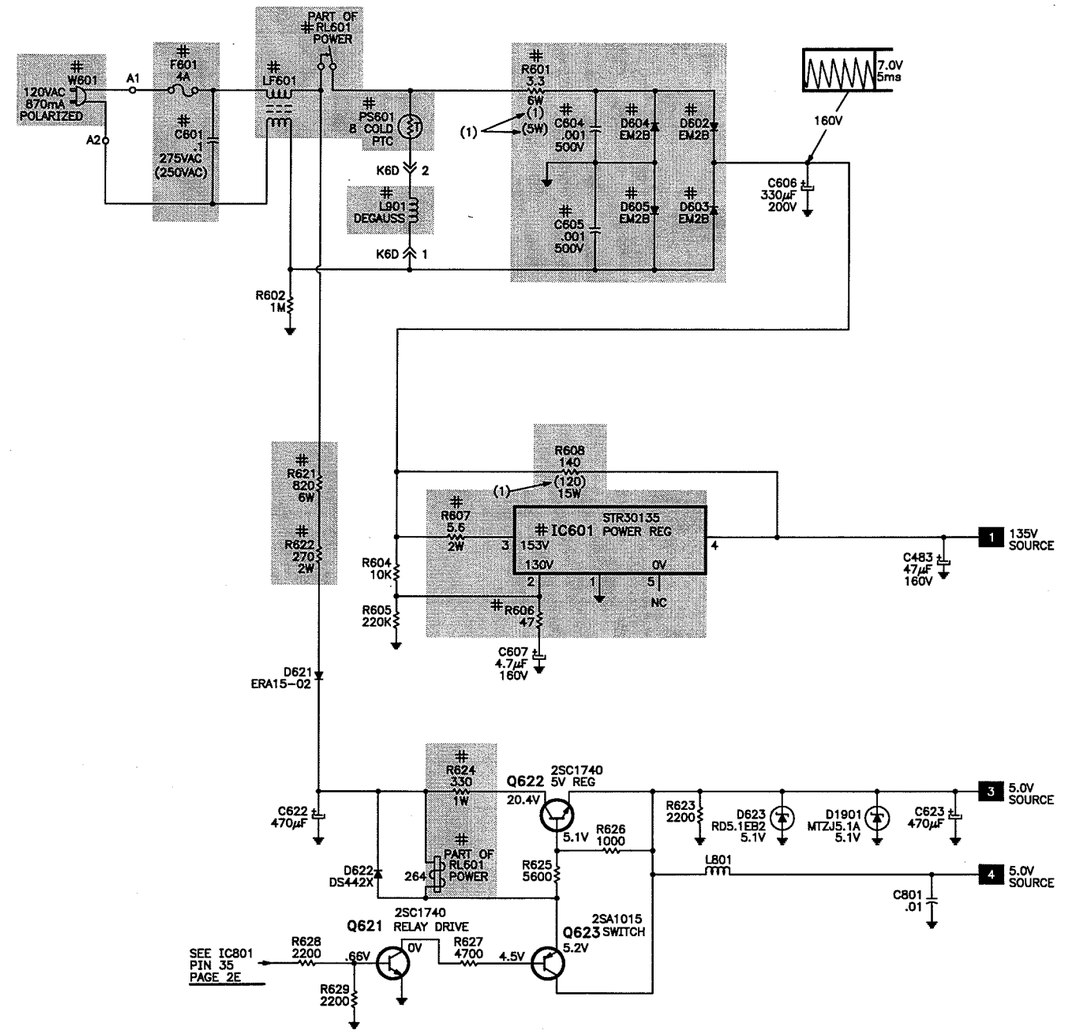
SERVICE MODE ADJUSTMENT CHART

Service No.	Adjustment	Value Range	Initial Value	On-Set Value	Notes
01	HP	0 - 31	13	13	Horizontal Phase (Horizontal Centering)
02	IAS	0, 1	0	0	IF AGC Switch, 0 = TV (Normal), 1 = AV (IF Gain Minimum)
03	RAD	0 - 63	25	39	RF AGC Delay
04	PT	0 - 127	64	55	PLL Tuning
05	ADA	0 - 63	31	28	APC Detect
06	CD	0, 1	0	0	C - Diff
07	VS	0 - 63	32	36	Vertical Size
08	RB	0 - 255	0	22	Red Bias
09	GB	0 - 255	0	22	Green Bias
10	BB	0 - 255	0	0	Blue Bias
11	RD	0 - 127	60	74	Red Drive
12	BD	0 - 127	60	74	Blue Drive
13	TDS	0, 1	1	1	Trap & D (B.P.F.) Switch, 0 = Off, 1 = On.
14	AF	0, 1	0	0	Auto Flesh, 0 = Off, 1 = On.
15	BS	0, 1	0	0	Black Stretch, 0 = On, 1 = Off.
16	VL	0 - 7	4	4	Video Level
17	FL	0 - 31	15	15	FM Level
18	NIS	0, 1	1	1	Black Noise Inverter, 0 = On, 1 = Off.
19	ABL	0, 1	1	1	ABL Defeat, 0 = Off, 1 = On
20	WP	0, 1	1	1	White Peak Limiter, 0 = On, 1 = Off
21	GD	0 - 15	7	7	Green Drive Reproduction
22	VC	0 - 7	0	0	Vertical Size Compensation
23	VD	0 - 63	32	32	Vertical Position
24	AG	0 - 3	0	0	AFC Gain, 0 = Auto, 1 = High Gain, 10 = Low Gain, 11 = Non Gate
25	SB	0 - 63	32	25	Sub Brightness
26	SCO	0 - 31	7	6	Sub Color
27	STI	0 - 31	21	21	Sub Tint
28	SSH	0 - 15	8	8	Sub Sharpness
29	OPT	0 - 255	36	36	Option 1, data should be in binary 8 bit 00100100
30	OP2	0 - 255	0	0	Option 2, data should be in binary 8 bit 00000000
31	HR	0 - 63	0	0	OSD Horizontal Position
32	INP	0 - 63	0	0	Input Level
33	STE	0 - 63	0	0	Stereo VCO
34	FIL	0 - 63	0	0	fH Reject Filter
35	LSP	0 - 63	0	0	Low Separation
36	HSP	0 - 63	0	0	High Separation
37	SPV	0 - 63	0	0	SAP VCO
38	PCO	0 - 63	0	0	PIP Color
39	PTI	0 - 63	0	0	PIP Tint
40	DRV	0 - 127	-	74	Red Drive, press 1 to decrease value and 3 to increase value.
	DRV	0 - 127	-	74	Blue Drive, press 7 to decrease value and 9 to increase value.
41	-	0 - 255	-	-	Red Bias, press 1 to decrease value and 3 to increase value.
	-	0 - 255	-	-	Green Bias, press 4 to decrease value and 6 to increase value.
	-	0 - 255	-	-	Blue Bias, press 7 to decrease value and 9 to increase value.

MAIN BOARD PLACEMENT CHART



H
POWER SUPPLY SCHEMATIC



SANYO

MODEL DS19590 (CHASSIS DS19590-00/01)

SCHEMATIC NOTES

(1) USED IN CHASSIS DS19590-00.

For SAFETY use only equivalent replacement part, see parts list.

—×— Circuitry not used in some versions.

- - - - Circuitry used in some versions.

Ground

Chassis ground

Common tie point

Δ Taken from common tie point

3 Schematic CIRCUITRACE® Voltage source tie point.

5.0V Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless otherwise noted.
Waveforms taken with triggered scope and colorbar signal. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter and a 1000μV RF signal, with colorbar pattern applied to antenna terminal.
Controls adjusted for normal operation.
Capacitors are 50 volts or less, 5% or greater unless noted.
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.
Resistors are 1/2W or less, 5% or greater unless noted.
Value in ( ) used in some versions.
Measurements with switching as shown unless noted.
Rated voltage shown on zener diodes.

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

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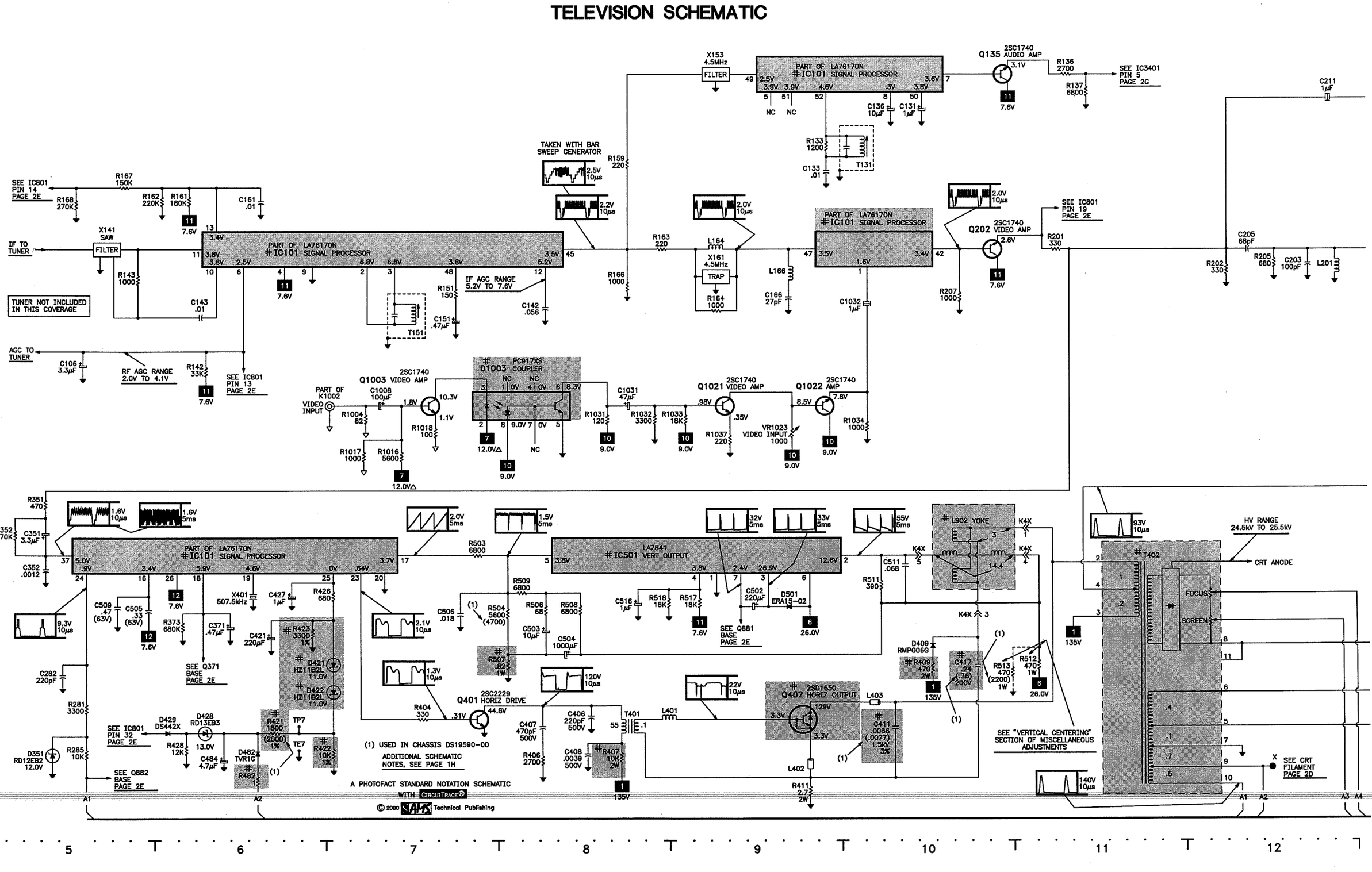
TELEVISION SCHEMATIC


X153 4.5MHz FILTER
PART OF LA76170N #IC101 SIGNAL PROCESSOR
Q135 2SC1740 AUDIO AMP
SEE IC3401 PIN 5 PAGE 2G
TAKEN WITH BAR SWEEP GENERATOR
SEE IC801 PIN 14 PAGE 2E
X141 SAW FILTER
IF TO TUNER
TUNER NOT INCLUDED IN THIS COVERAGE
AGC TO TUNER
RF AGC RANGE 2.0V TO 4.1V
SEE IC801 PIN 13 PAGE 2E
IF AGC RANGE 5.2V TO 7.6V
X161 4.5MHz TRAP
Q202 2SC1740 VIDEO AMP
SEE IC801 PIN 19 PAGE 2E
Q1003 2SC1740 VIDEO AMP
PART OF K1002 VIDEO INPUT
D1003 PC917XS COUPLER
Q1021 2SC1740 VIDEO AMP
Q1022 2SC1740 AMP
VR1023 VIDEO INPUT 1000
SEE Q882 BASE PAGE 2E
SEE Q371 BASE PAGE 2E
SEE IC801 PIN 32 PAGE 2E
D351 RD12EB2 12.0V
D428 RD13EB3
D429 DS442X
D482 TVR16
X401 507.5kHz
Q401 2SC2229 HORIZ DRIVE
(1) USED IN CHASSIS DS19590-00 ADDITIONAL SCHEMATIC NOTES, SEE PAGE 1H
A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®
© 2000 SAMS Technical Publishing
IC501 VERT OUTPUT
Q881 BASE PAGE 2E
D501 ERA15-02
L902 YOKE
T402
HV RANGE 24.5kV TO 25.5kV
CRT ANODE
FOCUS
SCREEN
SEE CRT FILAMENT PAGE 2D
Q402 2SD1650 HORIZ OUTPUT
D409 RMPG06G
SEE "VERTICAL CENTERING" SECTION OF MISCELLANEOUS ADJUSTMENTS

TELEVISION SCHEMATIC continued

C

D

PART OF LA76170N
#IC101 SIGNAL PROCESSOR

SEE IC801 PIN 22 PAGE 2E
SEE IC801 PIN 23 PAGE 2E
SEE IC801 PIN 24 PAGE 2E
SEE IC801 PIN 25 PAGE 2E
SEE IC801 PIN 4 PAGE 2E
SEE IC801 PIN 3 PAGE 2E

TAKEN WITH CHROMA BAR SWEEP GENERATOR

T402 BOTTOM VIEW

SEE IC801 PIN 15 PAGE 2E

IC481 BA178M09T 9V REG

Q705 2SC2621 RED OUTPUT
Q701 2SC2621 BLUE OUTPUT
Q703 2SC2621 GREEN OUTPUT
Q721 2SA1015 BIAS

CRT SOCKET K701A

SEE T402 PIN 9 PAGE 2B

#Q901 CRT A48KRD82X

FOCUS RANGE 6kV TO 10kV

TO CRT SHIELD

(1) USED IN CHASSIS DS19590-00

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 1H

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

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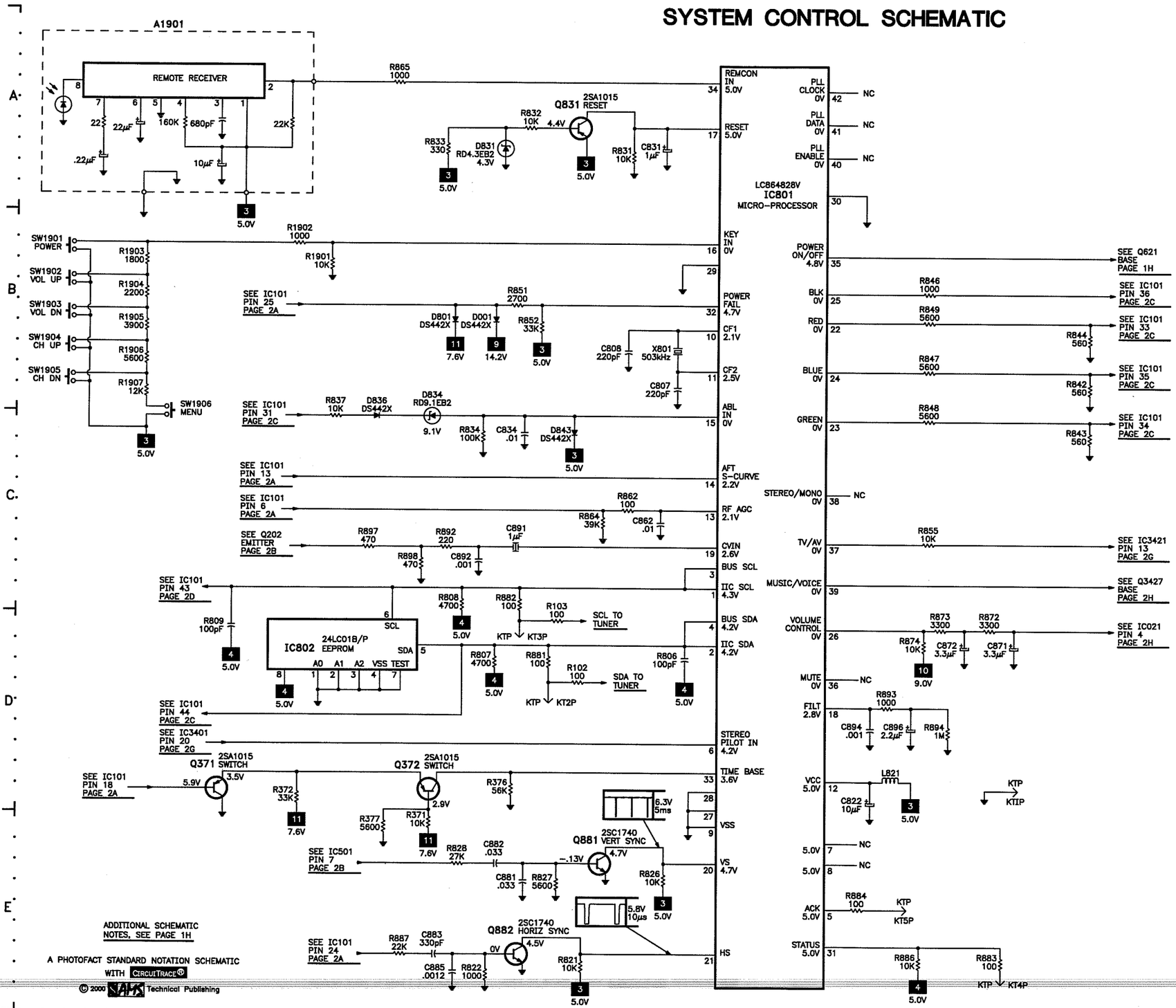
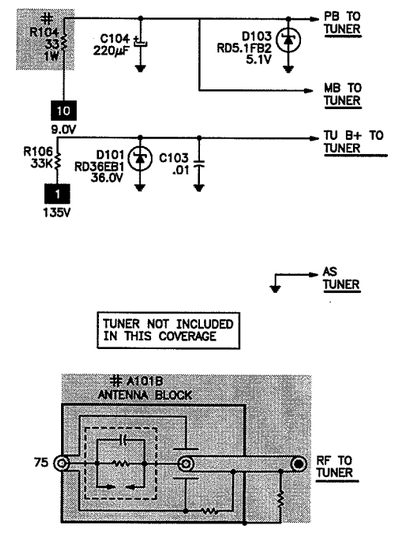
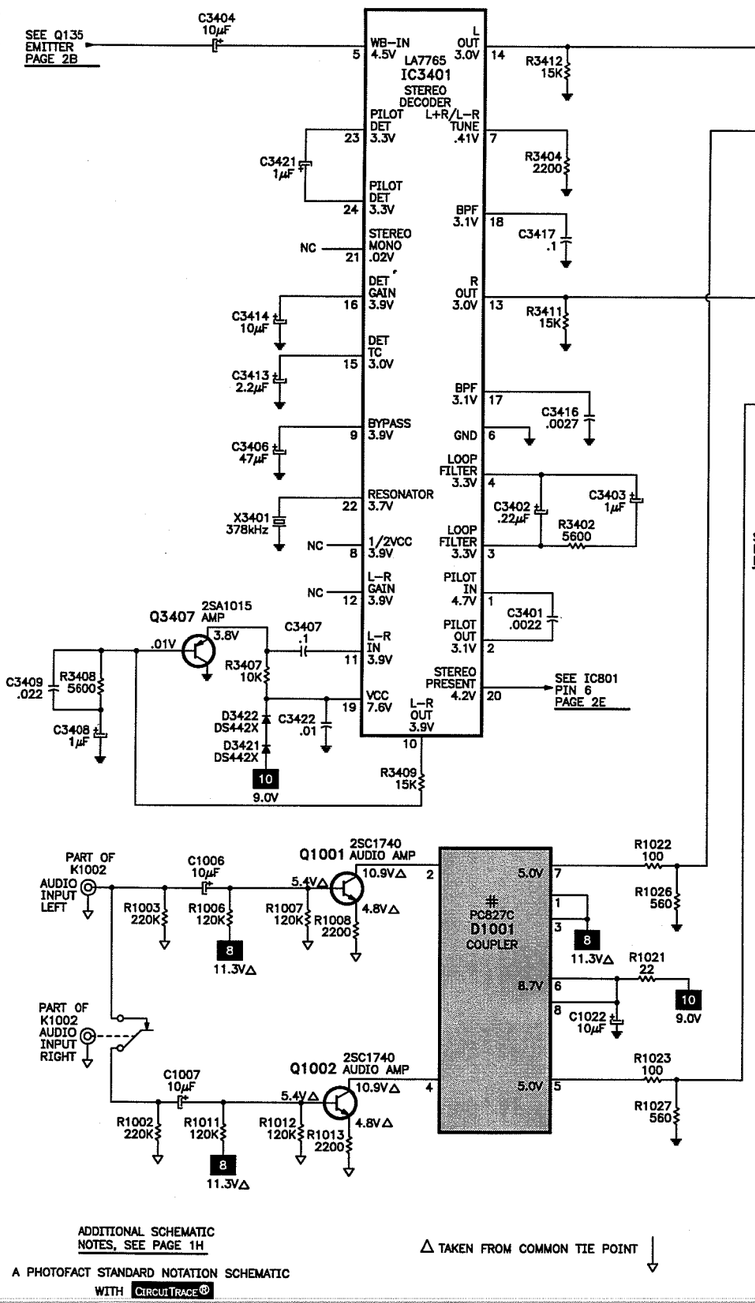
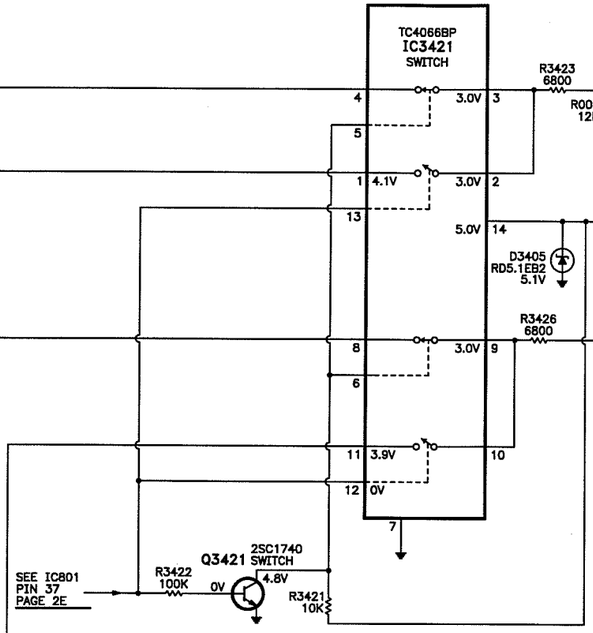
SYSTEM CONTROL SCHEMATIC

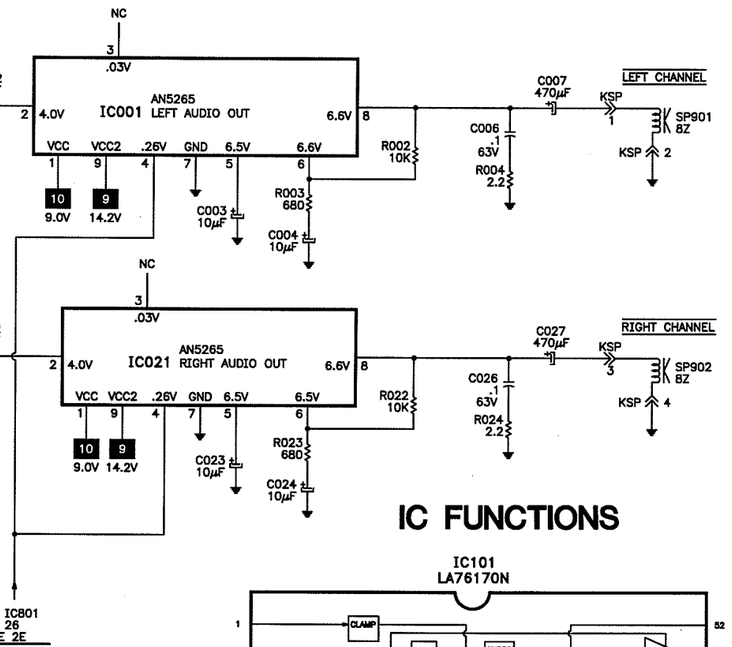




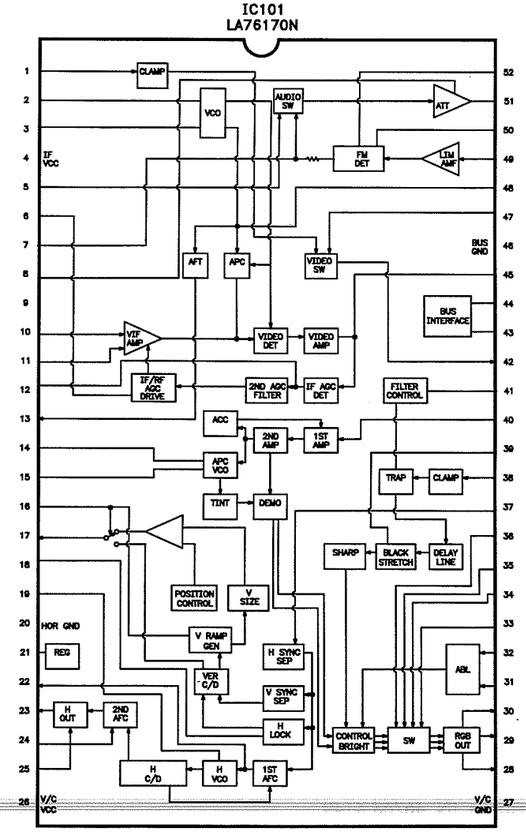
AUDIO SCHEMATIC

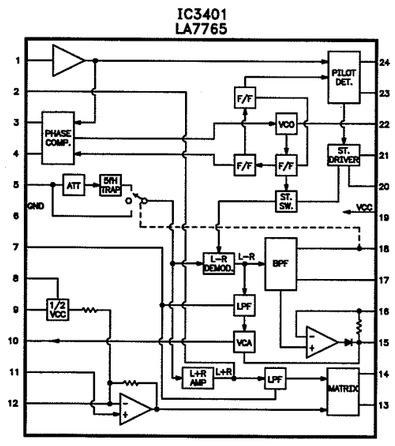


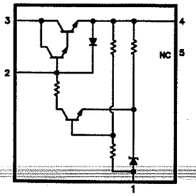

TC4066BP IC3421 SWITCH
SEE IC801 PIN 37 PAGE 2E
Q3421 2SC1740 SWITCH
D3405 RD5.1EB2 5.1V
SEE IC801 PIN 39 PAGE 2E
SEE IC801 PIN 26 PAGE 2E

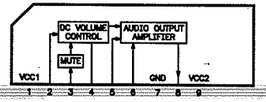


IC FUNCTIONS









C1020 .001 1kV (250V)

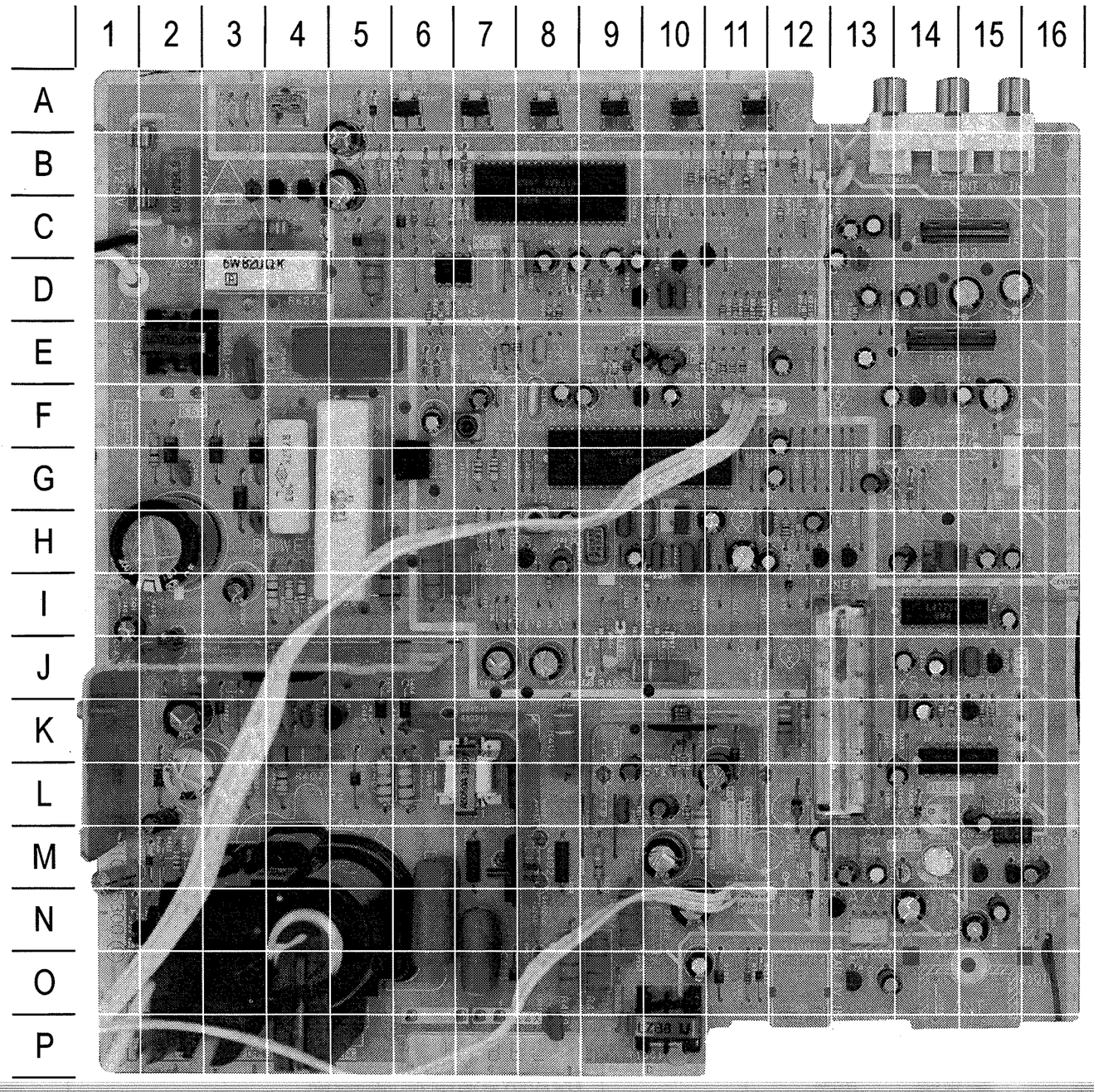
△ TAKEN FROM COMMON TIE POINT

SANYO

MODEL DS19590 (CHASSIS DS19590-00/01)

SET 4325 Page 3

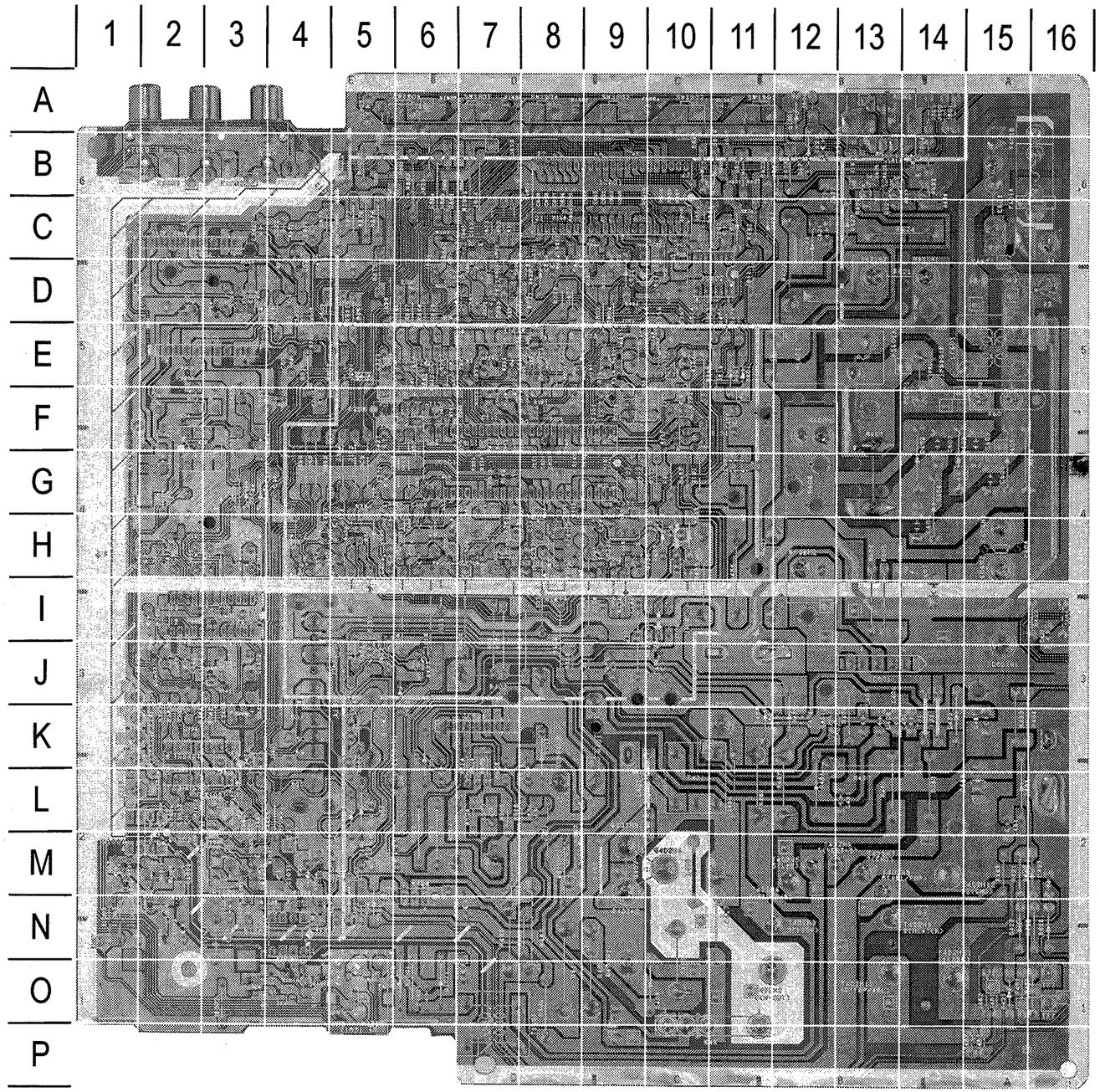
MAIN BOARD - TOP VIEW



MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

A101	J13	C489	J8	C3407	J15	D1012	O11	Q831	D9	R489	H7	R881	B10
A1901	A4	C493	M1	C3408	J14	D1901	A5	Q881	D10	R491	O2	R882	B11
C002	E13	C496	J7	C3409	J14	D3405	L14	Q882	C11	R492	C6	R883	B11
C003	F13	C497	H12	C3413	H15	D3421	G14	Q1001	M15	R493	K2	R884	B11
C004	F15	C498	F6	C3414	H15	D3422	G14	Q1002	M15	R495	G7	R886	C6
C006	F14	C502	L11	C3416	H15	F601	B2	Q1003	O13	R497	N9	R887	I10
C007	F15	C503	L10	C3417	H14	IC001	E14	Q1021	M14	R499	G7	R897	D9
C008	D15	C504	M10	C3421	H14	IC021	C14	Q1022	N13	R503	I10	R898	D9
C022	C13	C505	H10	C3424	F14	IC101	G8	Q3407	J15	R504	K10	R1001	O11
C023	D13	C506	L9	C3427	C14	IC481	G6	Q3421	K15	R506	L10	R1902	B10
C024	D14	C509	H10	D001	E6	IC501	K10	Q3422	F14	R507	M10	R3405	L13
C026	D14	C511	P8	D101	N12	IC601	J3	Q3427	D13	R508	L10	R3407	I15
C027	D15	C516	L9	D103	L12	IC801	C7	R102	B12	R509	K10	R3421	K14
C104	M12	C601	B2	D351	I12	IC802	D6	R103	B11	R511	M9	R3422	K14
C106	L14	C604	H3	D409	O7	IC3401	I14	R104	K12	R517	I9	R3423	K15
C131	F7	C605	G2	D421	O2	IC3421	L14	R106	O9	R518	L9	R3425	D13
C136	H8	C606	H2	D422	N2	K1002	A14	R136	I8	R601	G4	R3426	K15
C142	H9	C607	I3	D428	M2	K2SW	F11	R161	I10	R602	F2	RL601	E5
C147	H8	C622	B5	D429	N1	K4BW	N11	R201	E9	R604	I4	SW1901	A6
C151	F8	C623	B5	D481	L5	K4X	O6	R202	E9	R605	I4	SW1902	A7
C208	F9	C822	D8	D482	L2	K6D	F2	R271	E10	R606	I4	SW1903	A8
C211	E9	C831	D8	D483	K3	KSP	G15	R272	E11	R607	H5	SW1904	A9
C212	F10	C871	C13	D484	K6	KTP	L15	R281	H12	R608	G5	SW1905	A10
C252	H10	C872	D13	D486	K5	L164	E8	R285	I10	R621	D3	SW1906	A11
C253	H9	C881	D10	D487	C6	L166	E7	R401	K8	R622	D5	T131	F7
C256	H11	C882	D10	D489	H7	L201	E9	R402	J10	R623	B6	T151	H8
C272	E12	C891	D9	D493	H7	L256	H12	R404	I9	R624	C4	T401	L7
C351	E10	C896	D9	D501	K11	L401	L8	R406	K4	R628	B5	T402	O4
C371	G12	C1002	O10	D602	G3	L402	M8	R407	K4	R803	D8	T1001	P10
C401	H11	C1003	N15	D603	G3	L403	M7	R409	O8	R804	D8	TE7	O1
C403	H12	C1006	N15	D604	G3	L801	C6	R411	O9	R821	D10	TP7	O1
C405	H12	C1007	M16	D605	G2	L821	D8	R421	M2	R828	I7	TP50	O2
C406	K4	C1008	O13	D621	C6	LF601	E2	R422	O2	R842	E11	TP51	O2
C407	K4	C1020	B13	D622	C4	PS601	E3	R423	I2	R843	E11	VR1023	M14
C408	K4	C1022	L15	D623	B5	Q135	H8	R426	D6	R844	E11	X141	H9
C411	N7	C1023	N14	D801	E6	Q202	F9	R428	N2	R846	D11	X153	F6
C417	N6	C1031	M13	D831	D9	Q371	H12	R481	L4	R847	D11	X161	E8
C421	I1	C1032	M13	D834	B6	Q372	H13	R482	M2	R848	D11	X251	H10
C427	F12	C3401	K14	D836	B6	Q401	K5	R483	L3	R849	D11	X401	H10
C482	N10	C3402	J14	D843	B7	Q402	M7	R484	L6	R855	D12	X801	D8
C483	L2	C3403	K14	D1001	M15	Q621	B3	R485	D6	R872	C13	X3401	H14
C484	L2	C3404	G13	D1003	N13	Q622	B4	R486	H6	R873	C12		
C487	K2	C3406	I15	D1011	O11	Q623	B4	R487	L5	R874	C12		

MAIN BOARD - BOTTOM VIEW



MAIN BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C009	F4	C841	E7	R137	H4	R287	F6	R808	C10	R1002	M1	R1031	N4
C029	C2	C842	E6	R142	G8	R288	F6	R809	C10	R1003	N2	R1032	N4
C103	J4	C843	E6	R143	H8	R351	E7	R822	D6	R1004	O3	R1033	N4
C133	F10	C862	C8	R151	F9	R352	E7	R826	D7	R1006	N2	R1034	M4
C143	H8	C883	D7	R159	E9	R371	H5	R827	D7	R1007	N2	R1037	M3
C161	G7	C885	C7	R162	G7	R372	H5	R831	D9	R1008	M2	R1901	B8
C166	E10	C892	C7	R163	E9	R373	G7	R832	D7	R1011	M1	R1903	A11
C202	F7	C894	C8	R164	E9	R376	H4	R833	D8	R1012	M1	R1904	A10
C203	E8	C3422	I3	R166	E9	R377	H4	R834	C9	R1013	M2	R1905	A8
C205	E8	R002	E2	R167	C6	R400	H5	R837	B11	R1015	O4	R1906	A7
C282	G5	R003	E2	R168	C8	R403	H6	R851	B11	R1016	O4	R1907	A6
C352	F8	R004	F2	R205	E8	R496	D9	R852	B10	R1017	O3	R3402	K3
C801	C10	R009	F3	R207	F8	R625	B13	R862	C9	R1018	O4	R3404	I3
C803	F8	R022	C2	R212	F7	R626	B13	R864	D9	R1021	L2	R3408	J3
C804	F8	R023	D3	R251	H7	R627	B14	R865	B13	R1022	L2	R3409	J2
C807	C9	R024	D3	R252	H6	R629	B14	R892	D7	R1023	L2	R3411	J3
C808	C9	R029	C2	R273	F7	R806	C10	R893	C8	R1026	L3	R3412	I2
C834	C9	R133	F10	R286	F6	R807	C10	R894	C8	R1027	L3	R3420	E4

TEST EQUIPMENT

Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3100	Isolation Transformer	PR570
Generators		Capacitance Analyzer	LC102
RGB	CM2125	CRT Analyzer	CR7000
Multiburst Signal	VG91	AC Leakage Tester	PR570
Color Bar	VG91	Inductance Analyzer	LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	Field Strength Meter	SL753
Frequency Meter	SC3100	Transistor Tester	TF46
Hi-Voltage Probe	HP200	Horizontal Analyzer	HA-2500
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

PARTS LIST

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.
D001	DS442X	407 005 4505	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
	1N4148	408 008 2406	ECG519
D101	RD36EB1	407 056 2307	ECG5037A
	MTZJ36A	407 100 0204	-
D103	RD5.1FB2	407 056 8903	ECG135A
	RD5.1FB3	407 056 9009	-
D351	RD12EB2	407 054 3207	ECG5021T1
	RD12EB3	407 054 3306	ECG5021A
	MTZJ12C	407 063 8408	ECG5021T1
	MTZJ12B	407 099 6607	ECG5021T1
D409	ES1	407 007 6606	ECG552
	RMPG06G	407 124 5506	ECG552
	ERA18-04	407 124 6404	ECG552
# **D421, 22**	HZ11B2L	407 158 1307	ECG5020A
D428	RD13EB3	407 054 4808	ECG5022A
	MTZJ13C	407 099 3309	-
D429	DS442X	407 005 4505	ECG519
	1N4148	408 008 2406	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
D481	ERA18-04	407 124 6404	ECG552
	ES1	407 007 6606	ECG552
	RMPG06G	407 124 5506	ECG552
D482	TVR1G	407 011 4407	ECG552
D483	ERA18-04	407 124 6404	ECG552
	ES1	407 007 6606	ECG552
	RMPG06G	407 124 5506	ECG552
D484, 86	ERB44-04	407 006 4108	ECG552
	EU2	407 007 7603	ECG552
D487	ERA15-02	407 005 8602	ECG552
	MPG06D	407 088 6502	ECG552
	S5277B	407 011 3004	ECG552
	1N4002ID	408 009 9404	ECG116
D489	DS442X	407 005 4505	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
	1N4148	408 008 2406	ECG519
D493	RD7.5EB3	407 057 6502	ECG5015A
	MTZJ7.5C	407 063 9306	-
D501	ERA15-02	407 005 8602	ECG552
	S5277B	407 011 3004	ECG552
	MPG06D	407 088 6502	ECG552
	1N4002ID	408 009 9404	ECG116
# **D602** Thru			
# **D605**	EM2B	407 005 7605	ECG125
	GP15G	408 008 8606	ECG125
	1S1887A	407 013 3200	ECG552
D621	ERA15-02	407 005 8602	ECG552
	S5277B	407 011 3004	ECG552
	MPG06D	407 088 6502	ECG552
	1N4002ID	408 009 9404	ECG116
D622	DS442X	407 005 4505	ECG519
	1N4148	408 008 2406	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
D623	RD5.1EB2	407 056 8002	ECG5010A
	RD5.1EB3	407 056 8200	ECG5010A
	MTZJ5.1A	407 063 8606	ECG5010T1
	MTZJ5.1B	407 099 5204	ECG5010T1
D721, 22	DS442X	407 005 4505	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
	1N4148	408 008 2406	ECG519

 # For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.
D801	DS442X	407 005 4505	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
	1N4148	408 008 2406	ECG519
D831	RD4.3EB2	407 056 4707	ECG5008A
	MTZJ3.6B	407 065 1308	-
D834	RD9.1EB2	407 057 9701	ECG5018A
	RD9.1EB3	407 057 9800	ECG5018A
	MTZJ9.1C	407 063 9702	-
	MTZJ9.1B	407 099 6003	-
D836, 43	DS442X	407 005 4505	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
	1N4148	408 008 2406	ECG519
# **D1001**	PC827C	407 145 3703	-
	PC827D	407 176 6100	-
	TLP521-2-BL	407 176 6209	-
# **D1003**	PC917XS	407 205 1601	ECG552
D1011	ES1	407 007 6606	ECG552
	RMPG06G	407 124 5506	ECG552
	ERA18-04	407 124 6404	ECG552
D1012	MTZJ12C	407 063 8408	ECG5021T1
	RD12EB3	407 054 3306	ECG5021A
D1901	RD5.1EB2	407 056 8002	ECG5010A
	MTZJ5.1A	407 063 8606	ECG5010T1
D3405	RD5.1EB2	407 056 8002	ECG5010A
	RD5.1EB3	407 056 8200	ECG5010A
	MTZJ5.1A	407 063 8606	ECG5010T1
	MTZJ5.1B	407 099 5204	ECG5010T1
D3421, 22	DS442X	407 005 4505	ECG519
	1SS133	407 012 4406	ECG519
	1S2076	407 013 4207	ECG177
	1S2473	407 013 7109	ECG177
	1N4148	408 008 2406	ECG519
IC001, 021	AN5265	409 073 1509	ECG1789
# **IC101**	LA76170N	409 431 2100	-
IC481	UPC78M09AHF	409 366 7904	-
	BA178M09T	409 367 2809	ECG1966
	MC78M09CT	409 370 0007	-
# **IC501**	LA7841	409 340 1904	-
# **IC601**	STR30135	409 047 8602	ECG1778
IC801	LC864828V	-	-
	LC864828V-5K81	410 324 5405	-
IC802	ST24C01B6	409 296 4004	-
	24LC01B/P	409 321 0902	-
	XLS24C01AP	409 321 7307	-
	AT24C01A-10PC-2.5	410 243 3803	-
IC3401	LA7765	409 274 3708	-
IC3421	LC4066B	409 020 8704	ECG4066B
	MC14066B	409 030 5809	ECG4066B
	MLC4066B	409 207 1900	-
	TC4066BP	409 051 3501	ECG4066B
	UPD4066BC	409 059 2605	ECG4066B
Q135, 202	2SC1740S-Q	405 011 8401	ECG85
	2SC1740S-R	405 011 8500	ECG85
	2SC1740S-S	405 011 8609	ECG85
	2SC1815-GR	405 012 2002	ECG85
	2SC1815-O	401 012 2101	ECG85
	2SC1815-Y	405 012 2309	ECG85
	2SC945A-PA	405 020 7501	ECG85
	2SC945A-QA	405 020 7709	ECG85
	2SC945A-RA	405 020 7907	ECG85
Q371, 72	2SA1015-O(SAN)	405 001 7407	ECG290A
	2SA1015-Y(SAN)	405 001 7605	ECG290A
	2SA564A-Q(CU)	405 004 3109	ECG290A
	2SA564A-R(CU)	405 004 3208	ECG290A
	2SA933S-Q	405 006 1707	ECG290A
	2SA933S-R	405 006 1806	ECG290A
	2SA1015-GR(SAN)	406 000 6804	ECG290A
Q401	2SC2229-M(SAN-1)	405 000 5302	ECG399
	2SC2228-D	405 040 5600	ECG399
	2SC2228-E	405 029 6901	ECG399
	2SC2228-M	405 040 6102	ECG399

 # For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.
# **Q402**	2SD1650-CTV-YB	405 022 6700	ECG2331
Q621, 22	2SC1740S-Q	405 011 8401	ECG85
	2SC1740S-R	405 011 8500	ECG85
	2SC1740S-S	405 011 8609	ECG85
	2SC1815-GR	405 012 2002	ECG85
	2SC1815-O	401 012 2101	ECG85
	2SC1815-Y	405 012 2309	ECG85
	2SC945A-PA	405 020 7501	ECG85
	2SC945A-QA	405 020 7709	ECG85
	2SC945A-RA	405 020 7907	ECG85
Q623	2SA1015-O(SAN)	405 001 7407	ECG290A
	2SA1015-Y(SAN)	405 001 7605	ECG290A
	2SA564A-Q(CU)	405 004 3109	ECG290A
	2SA564A-R(CU)	405 004 3208	ECG290A
	2SA933S-Q	405 006 1707	ECG290A
	2SA933S-R	405 006 1806	ECG290A
Q701, 03, 05	2SC3620(LB-SAN-1)	406 000 3605	ECG157
	2SC2621-C-RA	405 066 4304	ECG157
	2SC2621-D-RA	405 041 6507	ECG157
	2SC2621-E-RA	405 041 6705	ECG157
	2SC2688(1)-K	405 066 9903	ECG157
	2SC2688(1)-L	405 067 0008	ECG157
	2SC2688(1)-M	405 067 0107	ECG157
Q721, 831	2SA1015-GR(SAN)	406 000 6804	ECG290A
	2SA1015-O(SAN)	405 001 7407	ECG290A
	2SA1015-Y(SAN)	405 001 7605	ECG290A
	2SA564A-Q(CU)	405 004 3109	ECG290A
	2SA564A-R(CU)	405 004 3208	ECG290A
	2SA933S-Q	405 006 1707	ECG290A
	2SA933S-R	405 006 1806	ECG290A
Q881, 82	2SC1740S-Q	405 011 8401	ECG85
	2SC1740S-R	405 011 8500	ECG85
	2SC1740S-S	405 011 8609	ECG85
	2SC1815-GR	405 012 2002	ECG85
	2SC1815-O	401 012 2101	ECG85
	2SC1815-Y	405 012 2309	ECG85
	2SC945A-PA	405 020 7501	ECG85
	2SC945A-QA	405 020 7709	ECG85
	2SC945A-RA	405 020 7907	ECG85
Q1001, 02, 03	2SC1740S-Q	405 011 8401	ECG85
	2SC1740S-R	405 011 8500	ECG85
	2SC1740S-S	405 011 8609	ECG85
	2SC1815-GR	405 012 2002	ECG85
	2SC1815-O	401 012 2101	ECG85
	2SC1815-Y	405 012 2309	ECG85
	2SC945A-PA	405 020 7501	ECG85
	2SC945A-QA	405 020 7709	ECG85
	2SC945A-RA	405 020 7907	ECG85
Q1021, 22	2SC1740S-Q	405 011 8401	ECG85
	2SC1740S-R	405 011 8500	ECG85
	2SC1740S-S	405 011 8609	ECG85
	2SC1815-GR	405 012 2002	ECG85
	2SC1815-Y	405 012 2309	ECG85
	2SC945A-PA	405 020 7501	ECG85
	2SC945A-QA	405 020 7709	ECG85
Q3407	2SA1015-GR(SAN)	406 000 6804	ECG290A
	2SA1015-O(SAN)	405 001 7407	ECG290A
	2SA1015-Y(SAN)	405 001 7605	ECG290A
	2SA564A-Q(CU)	405 004 3109	ECG290A
	2SA564A-R(CU)	405 004 3208	ECG290A
	2SA933S-Q	405 006 1707	ECG290A
	2SA933S-R	405 006 1806	ECG290A
Q3421, 22, 27	2SC1740S-Q	405 011 8401	ECG85
	2SC1740S-R	405 011 8500	ECG85
	2SC1740S-S	405 011 8609	ECG85
	2SC1815-GR	405 012 2002	ECG85
	2SC1815-O	401 012 2101	ECG85
	2SC1815-Y	405 012 2309	ECG85
	2SC945A-PA	405 020 7501	ECG85
	2SC945A-QA	405 020 7709	ECG85
	2SC945A-RA	405 020 7907	ECG85

 # For SAFETY use only equivalent replacement part.

PARTS LIST continued

CONTROLS & RESISTORS

	Item No.	Function/Rating	Mfr. Part No.
#	**PS601**	8 Cold PTC	408 000 3203
#	**R104**	33 5% 1W	401 061 1706
#	**R401, 02**	3300 5% 2W	401 067 6408
#	**R407**	10K 5% 2W	401 064 9907
#	**R409**	470 5% 2W	401 068 3703
#	**R411**	2.7 5% 2W	401 066 3705
#	**R421** (1)	1800 1% 1/6W	401 148 7201
#	**R421** (2)	2000 1% 1/16W	401 053 0403
#	**R422**	10K 1% 1/6W	401 052 6802
#	**R423**	3300 1% 1/6W	401 053 2605
#	**R481**	68 5% 1/2W Nonflammable	401 011 1206
#	**R482**	1 5% 1/4W Nonflammable	401 011 9004
#	**R483**	1 5% 1/2W Nonflammable	401 006 7701
#	**R484**	2.2 5% 1W	401 059 9608
#	**R486**	27 5% 2W	401 066 9103
#	**R487**	2.2 5% 1W	401 059 9608
#	**R489**	8.2 5% 2W	401 069 5607
	R492	33K 1% 1/6W	401 156 8504
#	**R497** (1)	2.2 5% 2W	401 066 3002
#	**R497** (2)	1.8 5% 2W	401 064 5701
#	**R507**	.82 5% 1W	401 057 7507
#	**R601** (1)	3.3 10% 6W Wirewound	402 058 4403
		3.3 10% 6W Wirewound	402 057 8006
		3.3 10% 5W Wirewound	402 075 4707
#	**R601** (2)	1 10% 6W Wirewound	402 055 3201
		1 10% 6W Wirewound	402 055 3300
		1 10% 5W Wirewound	402 072 2706
#	**R606**	47 5% 1/2W Nonflammable	401 010 2600
#	**R607**	5.6 5% 2W	401 068 6209
#	**R608** (1)	140 5% 15W Wirewound	402 056 5204
		140 5% 15W Wirewound	402 076 9800
#	**R608** (2)	120 5% 15W Wirewound	402 057 1304
		120 5% 15W Wirewound	402 073 4105
#	**R621**	820 10% 6W Wirewound	402 078 6203
#	**R622**	270 5% 2W	401 067 0000
#	**R624**	330 5% 1W	401 061 2505
#	**R711, 12, 13**	12K 5% 1W	401 058 9807
	VR1023	1000 Video Input	645 003 5524
		1000 Video Input	610 232 7861
		1000 Video Input	645 022 9503

 # For SAFETY use only equivalent replacement part.
(1) Used in chassis DS19590-01.
(2) Used in chassis DS19590-00.

CAPACITORS & ELECTROLYTICS

	Item No.	Rating	Mfr. Part No.
	C002, 22	10µF 20% 16V NP	403 085 4008
	C211	1µF 20% 50V	403 086 2300
#	**C411** (1)	.0086 3% 1.5kV	403 343 8502
		.0086 3% 1.5kV	404 077 5003
#	**C411** (2)	.0077 3% 1.5kV	404 077 4501
		.0077 3% 1.5kV	403 343 8106
#	**C417** (1)	.24 5% 200V	403 102 0006
#	**C417** (2)	.36 5% 200V	403 216 7601
	C493	2.2µF 20% 100V NP	404 056 5307
#	**C601**	.1 20% 275VAC	404 066 1702
		.1 10% 250VAC	404 071 2107
#	**C604, 05**	.001 10% 500V	403 075 7101
#	**C708**	.001 +100% -0% 2kV	403 175 3409
		.001 +80% -20% 2kV	403 077 2807
	C891	1µF 20% 50V NP	403 086 2300
#	**C1020**	.001 10% 125V	404 008 6604
		.001 20% 125V	404 046 5409
		.001 20% 250V	404 073 4000
	C1032	1µF 20% 50V NP	403 086 2300

 # For SAFETY use only equivalent replacement part.
(1) Used in chassis DS19590-01.
(2) Used in chassis DS19590-00.

CABINET PARTS

Item	Mfr. Part No.
Badge (SANYO)	610 236 9267
Cabinet Front	610 270 1449
Cabinet Rear	610 253 8656
	610 255 1327
Dec Sheet	610 271 3640
Transmitter	
Battery Cover	610 271 7112
	610 271 7143

COILS & TRANSFORMERS

	Item No.	Function/Rating	Mfr. Part No.
	L164	15µH	645 003 9713
		15µH	645 016 2657
	L166	33µH	645 003 9812
		33µH	645 016 2985
	L201	10µH	645 001 4567
		10µH	645 016 2534
	L256	22µH	610 029 8347
		22µH	610 001 4833
	L401	5.6µH	645 017 7682
	L402, 03	Ferrite Bead	610 031 9998
	L801, 21	5.6µH	645 008 2894
		5.6µH	645 016 3104
#	**L901**	Degaussing	645 027 9379
		Degaussing	645 002 9103
		Degaussing	645 022 8582
#	**L902** (1)	Yoke Horiz 2.67mH Vert 30mH	610 206 5985
		Yoke	645 026 3927
#	**L902** (2)	Yoke	610 238 2846
		Yoke	610 238 2853
#	**LF601**	Line Filter	610 031 5938
		Line Filter	610 223 1212
		Line Filter	610 031 6089
		Line Filter	610 031 6096
		Line Filter	610 031 6119
		Line Filter	610 031 6126
	T131	SIF	645 027 6095
	T151	VCO	645 027 6088
	T401	Horizontal Driver	610 000 7901
		Horizontal Driver	610 000 7918
#	**T402** (3)	Horizontal Output	645 004 1495
		Horizontal Output	645 004 7442
#	**T1001**	Power	645 011 6032
		Power	645 011 8081
		Power	610 229 9007

 # For SAFETY use only equivalent replacement part.
(1) Used in chassis DS19590-01.
(2) Used in chassis DS19590-00.
(3) Screen and focus controls are part of T402.

MISCELLANEOUS

	Item No.	Description	Mfr. Part No.	Notes
	A100 (1)	PC Board	610 275 8214	Main
	A100 (2)	PC Board	610 275 5806	Main
#	**A101** (3)	Tuner	645 032 5632	UHF/VHF
#	**A101B**	Block	645 029 5089	Antenna
	A1901	Receiver	645 027 4213	Remote
#	**F601**	Fuse	423 018 8101	4Amp, 125V, Fast Acting
		Fuse	423 007 1601	4Amp, 125V, Fast Acting
		Fuse	423 007 1809	4Amp, 125V, Fast Acting
	F601A, B	Fuse Holder	645 000 5077	For F601
		Fuse Holder	645 016 0479	For F601
#	**K701A**	Socket	645 025 6103	CRT
	K1002	Jack	645 016 6426	Assembly
#	**Q901** (1)	CRT	-	A48KRD82X
		CRT	414 009 3205	A48KRD82X(DT)
#	**Q901** (2)	CRT	413 007 6201	A48AAB37X
		CRT	414 009 2703	A48AGD12X
	Q901A1, A2, A3	Wedge	610 117 0154	Yoke Positioning
		Wedge	610 117 7924	Yoke Positioning
#	**RL601**	Relay	645 000 4155	Power
		Relay	645 011 2713	Power
		Relay	645 024 7767	Power
		Relay	645 024 7828	Power
		Relay	645 015 8629	Power
	SP901, 02	Speaker	610 055 6614	3" X 3", 8 Ohms, 2W
		Speaker	645 028 0870	-
	SW1901	Switch	645 027 7382	Power
	SW1902	Switch	645 027 7382	Volume Up
	SW1903	Switch	645 027 7382	Volume Down
	SW1904	Switch	645 027 7382	Channel Up
	SW1905	Switch	645 027 7382	Channel Down
	SW1906	Switch	645 027 7382	Menu
#	**W601**	Line Cord	645 030 5276	AC, Polarized
	X141	Filter	421 006 3206	SAW
	X153	Filter	610 015 2946	4.5MHz
		Filter	645 030 1049	4.5MHz
	X161	Trap	610 015 3059	4.5MHz
	X251	Crystal	610 204 4195	3.58MHz
		Crystal	610 245 9746	3.58MHz
		Crystal	610 012 0655	3.58MHz
	X401	Crystal	645 020 9147	507.5kHz
	X801	Crystal	645 021 9917	503kHz
	X3401	Crystal	645 004 1969	378kHz
		Magnet (1)	610 217 7794	Purity/Convergence
		Transmitter	645 032 6080	Remote
		Transmitter	645 032 6141	Remote

 # For SAFETY use only equivalent replacement part.
(1) Used in chassis DS19590-01.
(2) Used in chassis DS19590-00.
(3) Contact TNI Electronics for replacement; order by manufacturer's part number.

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